SEQUENCE LISTING

<110> Yon, Jeffrey, R
Grantham, Christopher J
Groot-Kormelink, Paulus J

<120> Nicotinic Acetylcholine Receptor

<130> JAB 1529 USA

<140> US 09/661,812
<141> 2000-09-14

<150> US 60/153,948
<151> 1999-09-15

<150> GB 0002431.5
<151> 2000-02-02

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<170> PatentIn version 3.0

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Val Glu Thr Glu Cys Leu Gly Ala Glu Gly Arg Leu Ala Leu Lys Leu
  1               5                  10                  15

ttc cgt gac ctc ttt gcc aac tac aca agt gcc ctg aga cct gtg gca   96
Phe Arg Asp Leu Phe Ala Asn Tyr Thr Ser Ala Leu Arg Pro Val Ala
             20                  25                  30

gac aca gac cag act ctg aat gtg acc ctg gag gtg aca ctg tcc cag   144
Asp Thr Asp Gln Thr Leu Asn Val Thr Leu Glu Val Thr Leu Ser Gln
         35                  40                  45

atc atc gac atg gat gaa cgg aac cag gtg ctg acc ctg tat ctg tgg   192
Ile Ile Asp Met Asp Glu Arg Asn Gln Val Leu Thr Leu Tyr Leu Trp
     50                  55                  60

ata cgg cag gag tgg aca gat gcc tac cta cga tgg gac ccc aat gcc   240
Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu Arg Trp Asp Pro Asn Ala
 65                  70                  75                  80

tat ggt ggc ctg gat gcc atc cgc atc ccc agc agt ctt gtg tgg cgg   288
Tyr Gly Gly Leu Asp Ala Ile Arg Ile Pro Ser Ser Leu Val Trp Arg
                 85                  90                  95
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cca gac atc gta ctc tat aac aaa gcc gac gcg cag cct cca ggt tcc   336
Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Ala Gln Pro Pro Gly Ser
            100                 105                 110

gcc agc acc aac gtg gtc ctg cgc cac gat ggc gcc gtg cgc tgg gac   384
Ala Ser Thr Asn Val Val Leu Arg His Asp Gly Ala Val Arg Trp Asp
        115                 120                 125

gcg ccg gcc atc acg cgc agc tcg tgc cgc gtg gat gta gca gcc ttc   432
Ala Pro Ala Ile Thr Arg Ser Ser Cys Arg Val Asp Val Ala Ala Phe
    130                 135                 140

ccg ttc gac gcc cag cac tgc ggc ctg acg ttc ggc tcc tgg act cac   480
Pro Phe Asp Ala Gln His Cys Gly Leu Thr Phe Gly Ser Trp Thr His
145                 150                 155                 160

ggc ggg cac caa ctg gat gtg cgg ccg cgc ggc gct gca gcc agc ctg   528
Gly Gly His Gln Leu Asp Val Arg Pro Arg Gly Ala Ala Ala Ser Leu
                165                 170                 175

gcg gac ttc gtg gag aac gtg gag tgg cgc gtg ctg ggc atg ccg gcg   576
Ala Asp Phe Val Glu Asn Val Glu Trp Arg Val Leu Gly Met Pro Ala
            180                 185                 190

cgg cgg cgc gtg ctc acc tac ggc tgc tgc tcc gag ccc tac ccc gac   624
Arg Arg Arg Val Leu Thr Tyr Gly Cys Cys Ser Glu Pro Tyr Pro Asp
        195                 200                 205

gtc acc ttc acg ctg ctg ctg cgc cgc cgc gcc gcc gcc tac gtg tgc   672
Val Thr Phe Thr Leu Leu Leu Arg Arg Arg Ala Ala Ala Tyr Val Cys
    210                 215                 220

aac ctg ctg ctg ccc tgc gtg ctc atc tcg ctg ctt gcg ccg ctc gcc   720
Asn Leu Leu Leu Pro Cys Val Leu Ile Ser Leu Leu Ala Pro Leu Ala
225                 230                 235                 240

ttc cac ctg cct gcc gac tca ggc gag aag gtg tcg ctg ggc gtc acc   768
Phe His Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu Gly Val Thr
                245                 250                 255

gtg ctg ctg gcg ctc acc gtc ttc cag ttg ctg ctg gcc gag agc atg   816
Val Leu Leu Ala Leu Thr Val Phe Gln Leu Leu Leu Ala Glu Ser Met
            260                 265                 270

cca ccg gcc gag agc gtg ccg ctc atc ggg aag tac tac atg gcc act   864
Pro Pro Ala Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr Met Ala Thr
        275                 280                 285

atg acc atg gtc aca ttc tca aca gca ctc acc atc ctt atc atg aac   912
Met Thr Met Val Thr Phe Ser Thr Ala Leu Thr Ile Leu Ile Met Asn
    290                 295                 300

ctg cat tac tgt ggt ccc agt gtc cgc cca gtg cca gcc tgg gct agg   960
Leu His Tyr Cys Gly Pro Ser Val Arg Pro Val Pro Ala Trp Ala Arg
305                 310                 315                 320

gcc ctc ctg ctg gga cac ctg gca cgg ggc ctg tgc gtg cgg gaa aga   1008
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Ala Leu Leu Leu Gly His Leu Ala Arg Gly Leu Cys Val Arg Glu Arg
                325                 330                 335

ggg gag ccc tgt ggg cag tcc agg cca cct gag tta tct cct agc ccc   1056
Gly Glu Pro Cys Gly Gln Ser Arg Pro Pro Glu Leu Ser Pro Ser Pro
            340                 345                 350

cag tcg cct gaa gga ggg gct ggc ccc cca gcg ggc cct tgc cac gag   1104
Gln Ser Pro Glu Gly Gly Ala Gly Pro Pro Ala Gly Pro Cys His Glu
        355                 360                 365

cca cga tgt ctg tgc cgc cag gaa gcc cta ctg cac cac gta gcc acc   1152
Pro Arg Cys Leu Cys Arg Gln Glu Ala Leu Leu His His Val Ala Thr
    370                 375                 380

att gcc aat acc ttc cgc agc cac cga gct gcc cag cgc tgc cat gag   1200
Ile Ala Asn Thr Phe Arg Ser His Arg Ala Ala Gln Arg Cys His Glu
385                 390                 395                 400

gac tgg aag cgc ctg gcc cgt gtg atg gac cgc ttc ttc ctg gcc atc   1248
Asp Trp Lys Arg Leu Ala Arg Val Met Asp Arg Phe Phe Leu Ala Ile
                405                 410                 415

ttc ttc tcc atg gcc ctg gtc atg agc ctc ctg gtg ctg gtg cag gcc   1296
Phe Phe Ser Met Ala Leu Val Met Ser Leu Leu Val Leu Val Gln Ala
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ctg                                                               1299
Leu
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Phe Arg Asp Leu Phe Ala Asn Tyr Thr Ser Ala Leu Arg Pro Val Ala
            20                  25                  30

Asp Thr Asp Gln Thr Leu Asn Val Thr Leu Glu Val Thr Leu Ser Gln
        35                  40                  45

Ile Ile Asp Met Asp Glu Arg Asn Gln Val Leu Thr Leu Tyr Leu Trp
    50                  55                  60

Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu Arg Trp Asp Pro Asn Ala
65                  70                  75                  80

Tyr Gly Gly Leu Asp Ala Ile Arg Ile Pro Ser Ser Leu Val Trp Arg
                85                  90                  95
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```
Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Ala Gln Pro Pro Gly Ser
            100                 105                 110

Ala Ser Thr Asn Val Val Leu Arg His Asp Gly Ala Val Arg Trp Asp
        115                 120                 125

Ala Pro Ala Ile Thr Arg Ser Ser Cys Arg Val Asp Val Ala Ala Phe
    130                 135                 140

Pro Phe Asp Ala Gln His Cys Gly Leu Thr Phe Gly Ser Trp Thr His
145                 150                 155                 160

Gly Gly His Gln Leu Asp Val Arg Pro Arg Gly Ala Ala Ala Ser Leu
                165                 170                 175

Ala Asp Phe Val Glu Asn Val Glu Trp Arg Val Leu Gly Met Pro Ala
            180                 185                 190

Arg Arg Arg Val Leu Thr Tyr Gly Cys Cys Ser Glu Pro Tyr Pro Asp
        195                 200                 205

Val Thr Phe Thr Leu Leu Leu Arg Arg Arg Ala Ala Ala Tyr Val Cys
    210                 215                 220

Asn Leu Leu Leu Pro Cys Val Leu Ile Ser Leu Leu Ala Pro Leu Ala
225                 230                 235                 240

Phe His Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu Gly Val Thr
                245                 250                 255

Val Leu Leu Ala Leu Thr Val Phe Gln Leu Leu Leu Ala Glu Ser Met
            260                 265                 270

Pro Pro Ala Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr Met Ala Thr
        275                 280                 285

Met Thr Met Val Thr Phe Ser Thr Ala Leu Thr Ile Leu Ile Met Asn
    290                 295                 300

Leu His Tyr Cys Gly Pro Ser Val Arg Pro Val Pro Ala Trp Ala Arg
305                 310                 315                 320

Ala Leu Leu Leu Gly His Leu Ala Arg Gly Leu Cys Val Arg Glu Arg
                325                 330                 335

Gly Glu Pro Cys Gly Gln Ser Arg Pro Pro Glu Leu Ser Pro Ser Pro
            340                 345                 350

Gln Ser Pro Glu Gly Gly Ala Gly Pro Pro Ala Gly Pro Cys His Glu
        355                 360                 365

Pro Arg Cys Leu Cys Arg Gln Glu Ala Leu Leu His His Val Ala Thr
    370                 375                 380

Ile Ala Asn Thr Phe Arg Ser His Arg Ala Ala Gln Arg Cys His Glu
385                 390                 395                 400
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Asp Trp Lys Arg Leu Ala Arg Val Met Asp Arg Phe Phe Leu Ala Ile
                405                 410                 415

Phe Phe Ser Met Ala Leu Val Met Ser Leu Leu Val Leu Val Gln Ala
            420                 425                 430

Leu


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                                     Met Gly Leu Arg Ser His His
                                     1               5

ctc agc ctg ggc ctt ctg ctt ctg ttt cta ctc cct gca gag tgc ctg      102
Leu Ser Leu Gly Leu Leu Leu Leu Phe Leu Leu Pro Ala Glu Cys Leu
        10                  15                  20

gga gct gag ggc cgg ctg gct ctc aag ctg ttc cgt gac ctc ttt gcc      150
Gly Ala Glu Gly Arg Leu Ala Leu Lys Leu Phe Arg Asp Leu Phe Ala
    25                  30                  35

aac tac aca agt gcc ctg aga cct gtg gca gac aca gac cag act ctg      198
Asn Tyr Thr Ser Ala Leu Arg Pro Val Ala Asp Thr Asp Gln Thr Leu
40                  45                  50                  55

aat gtg acc ctg gag gtg aca ctg tcc cag atc atc gac atg gat gaa      246
Asn Val Thr Leu Glu Val Thr Leu Ser Gln Ile Ile Asp Met Asp Glu
                60                  65                  70

cgg aac cag gtg ctg acc ctg tat ctg tgg ata cgg cag gag tgg aca      294
Arg Asn Gln Val Leu Thr Leu Tyr Leu Trp Ile Arg Gln Glu Trp Thr
            75                  80                  85

gat gcc tac cta cga tgg gac ccc aat gcc tat ggt ggc ctg gat gcc      342
Asp Ala Tyr Leu Arg Trp Asp Pro Asn Ala Tyr Gly Gly Leu Asp Ala
        90                  95                  100

atc cgc atc ccc agc agt ctt gtg tgg cgg cca gac atc gta ctc tat      390
Ile Arg Ile Pro Ser Ser Leu Val Trp Arg Pro Asp Ile Val Leu Tyr
    105                 110                 115

aac aaa gcc gac gcg cag cct cca ggt tcc gcc agc acc aac gtg gtc      438
Asn Lys Ala Asp Ala Gln Pro Pro Gly Ser Ala Ser Thr Asn Val Val
120                 125                 130                 135

ctg cgc cac gat ggc gcc gtg cgc tgg gac gcg ccg gcc atc acg cgc      486
Leu Arg His Asp Gly Ala Val Arg Trp Asp Ala Pro Ala Ile Thr Arg
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                140                 145                 150

agc tcg tgc cgc gtg gat gta gca gcc ttc ccg ttc gac gcc cag cac      534
Ser Ser Cys Arg Val Asp Val Ala Ala Phe Pro Phe Asp Ala Gln His
            155                 160                 165

tgc ggc ctg acg ttc ggc tcc tgg act cac ggc ggg cac caa ctg gat      582
Cys Gly Leu Thr Phe Gly Ser Trp Thr His Gly Gly His Gln Leu Asp
        170                 175                 180

gtg cgg ccg cgc ggc gct gca gcc agc ctg gcg gac ttc gtg gag aac      630
Val Arg Pro Arg Gly Ala Ala Ala Ser Leu Ala Asp Phe Val Glu Asn
    185                 190                 195

gtg gag tgg cgc gtg ctg ggc atg ccg gcg cgg cgg cgc gtg ctc acc      678
Val Glu Trp Arg Val Leu Gly Met Pro Ala Arg Arg Arg Val Leu Thr
200                 205                 210                 215

tac ggc tgc tgc tcc gag ccc tac ccc gac gtc acc ttc acg ctg ctg      726
Tyr Gly Cys Cys Ser Glu Pro Tyr Pro Asp Val Thr Phe Thr Leu Leu
                220                 225                 230

ctg cgc cgc cgc gcc gcc gcc tac gtg tgc aac ctg ctg ctg ccc tgc      774
Leu Arg Arg Arg Ala Ala Ala Tyr Val Cys Asn Leu Leu Leu Pro Cys
            235                 240                 245

gtg ctc atc tcg ctg ctt gcg ccg ctc gcc ttc cac ctg cct gcc gac      822
Val Leu Ile Ser Leu Leu Ala Pro Leu Ala Phe His Leu Pro Ala Asp
        250                 255                 260

tca ggc gag aag gtg tcg ctg ggc gtc acc gtg ctg ctg gcg ctc acc      870
Ser Gly Glu Lys Val Ser Leu Gly Val Thr Val Leu Leu Ala Leu Thr
    265                 270                 275

gtc ttc cag ttg ctg ctg gcc gag agc atg cca ccg gcc gag agc gtg      918
Val Phe Gln Leu Leu Leu Ala Glu Ser Met Pro Pro Ala Glu Ser Val
280                 285                 290                 295

ccg ctc atc ggg aag tac tac atg gcc act atg acc atg gtc aca ttc      966
Pro Leu Ile Gly Lys Tyr Tyr Met Ala Thr Met Thr Met Val Thr Phe
                300                 305                 310

tca aca gca ctc acc atc ctt atc atg aac ctg cat tac tgt ggt ccc     1014
Ser Thr Ala Leu Thr Ile Leu Ile Met Asn Leu His Tyr Cys Gly Pro
            315                 320                 325

agt gtc cgc cca gtg cca gcc tgg gct agg gcc ctc ctg ctg gga cac     1062
Ser Val Arg Pro Val Pro Ala Trp Ala Arg Ala Leu Leu Leu Gly His
        330                 335                 340

ctg gca cgg ggc ctg tgc gtg cgg gaa aga ggg gag ccc tgt ggg cag     1110
Leu Ala Arg Gly Leu Cys Val Arg Glu Arg Gly Glu Pro Cys Gly Gln
    345                 350                 355

tcc agg cca cct gag tta tct cct agc ccc cag tcg cct gaa gga ggg     1158
Ser Arg Pro Pro Glu Leu Ser Pro Ser Pro Gln Ser Pro Glu Gly Gly
360                 365                 370                 375
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gct ggc ccc cca gcg ggc cct tgc cac gag cca cga tgt ctg tgc cgc     1206
Ala Gly Pro Pro Ala Gly Pro Cys His Glu Pro Arg Cys Leu Cys Arg
                380                 385                 390

cag gaa gcc cta ctg cac cac gta gcc acc att gcc aat acc ttc cgc     1254
Gln Glu Ala Leu Leu His His Val Ala Thr Ile Ala Asn Thr Phe Arg
            395                 400                 405

agc cac cga gct gcc cag cgc tgc cat gag gac tgg aag cgc ctg gcc     1302
Ser His Arg Ala Ala Gln Arg Cys His Glu Asp Trp Lys Arg Leu Ala
        410                 415                 420

cgt gtg atg gac cgc ttc ttc ctg gcc atc ttc ttc tcc atg gcc ctg     1350
Arg Val Met Asp Arg Phe Phe Leu Ala Ile Phe Phe Ser Met Ala Leu
    425                 430                 435

gtc atg agc ctc ctg gtg ctg gtg cag gcc ctg tga gggctgggac          1396
Val Met Ser Leu Leu Val Leu Val Gln Ala Leu
440                 445                 450

taagtcatct agagggccct tcgaaggtaa gcctatccct aaccctctcc tcggtctcga   1456

ttctacgcgt accggtcatc atcaccatca ccattgagtt taaac                   1501
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<210> 4
<211> 450
<212> PRT
<213> Homo sapiens

<400> 4

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Met Gly Leu Arg Ser His His Leu Ser Leu Gly Leu Leu Leu Leu Phe
1               5                  10                  15

Leu Leu Pro Ala Glu Cys Leu Gly Ala Glu Gly Arg Leu Ala Leu Lys
            20                  25                  30

Leu Phe Arg Asp Leu Phe Ala Asn Tyr Thr Ser Ala Leu Arg Pro Val
        35                  40                  45

Ala Asp Thr Asp Gln Thr Leu Asn Val Thr Leu Glu Val Thr Leu Ser
    50                  55                  60

Gln Ile Ile Asp Met Asp Glu Arg Asn Gln Val Leu Thr Leu Tyr Leu
65                  70                  75                  80

Trp Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu Arg Trp Asp Pro Asn
                85                  90                  95
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```
Ala Tyr Gly Gly Leu Asp Ala Ile Arg Ile Pro Ser Ser Leu Val Trp
            100                 105                 110

Arg Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Ala Gln Pro Pro Gly
        115                 120                 125

Ser Ala Ser Thr Asn Val Val Leu Arg His Asp Gly Ala Val Arg Trp
    130                 135                 140

Asp Ala Pro Ala Ile Thr Arg Ser Ser Cys Arg Val Asp Val Ala Ala
145                 150                 155                 160

Phe Pro Phe Asp Ala Gln His Cys Gly Leu Thr Phe Gly Ser Trp Thr
                165                 170                 175

His Gly Gly His Gln Leu Asp Val Arg Pro Arg Gly Ala Ala Ala Ser
            180                 185                 190

Leu Ala Asp Phe Val Glu Asn Val Glu Trp Arg Val Leu Gly Met Pro
        195                 200                 205

Ala Arg Arg Arg Val Leu Thr Tyr Gly Cys Cys Ser Glu Pro Tyr Pro
    210                 215                 220

Asp Val Thr Phe Thr Leu Leu Leu Arg Arg Arg Ala Ala Ala Tyr Val
225                 230                 235                 240

Cys Asn Leu Leu Leu Pro Cys Val Leu Ile Ser Leu Leu Ala Pro Leu
                245                 250                 255

Ala Phe His Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu Gly Val
            260                 265                 270

Thr Val Leu Leu Ala Leu Thr Val Phe Gln Leu Leu Leu Ala Glu Ser
        275                 280                 285

Met Pro Pro Ala Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr Met Ala
    290                 295                 300

Thr Met Thr Met Val Thr Phe Ser Thr Ala Leu Thr Ile Leu Ile Met
305                 310                 315                 320

Asn Leu His Tyr Cys Gly Pro Ser Val Arg Pro Val Pro Ala Trp Ala
```

325 330 335

Arg Ala Leu Leu Leu Gly His Leu Ala Arg Gly Leu Cys Val Arg Glu
340 345 350

Arg Gly Glu Pro Cys Gly Gln Ser Arg Pro Pro Glu Leu Ser Pro Ser
355 360 365

Pro Gln Ser Pro Glu Gly Gly Ala Gly Pro Pro Ala Gly Pro Cys His
370 375 380

Glu Pro Arg Cys Leu Cys Arg Gln Glu Ala Leu Leu His His Val Ala
385 390 395 400

Thr Ile Ala Asn Thr Phe Arg Ser His Arg Ala Ala Gln Arg Cys His
405 410 415

Glu Asp Trp Lys Arg Leu Ala Arg Val Met Asp Arg Phe Phe Leu Ala
420 425 430

Ile Phe Phe Ser Met Ala Leu Val Met Ser Leu Leu Val Leu Val Gln
435 440 445

Ala Leu
450

<210> 5
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<213> Rattus sp.

<400> 5

Met Gly Thr Arg Ser His Tyr Leu Asp Leu Gly Phe Leu Leu Leu Leu
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Phe Leu Pro Ala Glu Cys Leu Gly Ala Glu Gly Arg Leu Ala His Lys
20 25 30

Leu Phe Arg Asp Leu Phe Ala Asn Tyr Thr Ser Ala Leu Arg Pro Val
35 40 45

Ala Asp Thr Asp Gln Thr Leu Asn Val Thr Leu Glu Val Thr Leu Ser
50 55 60

Gln Ile Ile Asp Met Asp Glu Arg Asn Gln Val Leu Thr Leu Tyr Leu
65 70 75 80

```
Trp Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu His Trp Asp Pro Lys
                85                  90                  95

Ala Tyr Gly Asp Leu Asp Ala Ile Arg Ile Pro Ser Arg Leu Val Trp
            100                 105                 110

Arg Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Thr Gln Pro Pro Ala
        115                 120                 125

Ser Ala Ser Thr Asn Val Val Val Arg His Asp Gly Ala Val Arg Trp
    130                 135                 140

Asp Ala Pro Ala Ile Thr Arg Ser Ser Cys Arg Val Asp Val Ser Ala
145                 150                 155                 160

Phe Pro Phe Asp Ala Gln Arg Cys Gly Leu Thr Phe Gly Ser Trp Thr
                165                 170                 175

His Gly Gly His Gln Leu Asp Val Arg Pro Arg Gly Thr Ser Ala Ser
            180                 185                 190

Leu Ala Asp Phe Val Glu Asn Val Glu Trp Arg Val Leu Gly Met Pro
        195                 200                 205

Ala Arg Arg Arg Val Leu Thr Tyr Gly Cys Cys Ser Glu Pro Tyr Pro
    210                 215                 220

Asp Val Thr Phe Thr Leu Leu Leu Arg Arg Arg Ala Ala Ala Tyr Val
225                 230                 235                 240

Cys Asn Leu Leu Leu Pro Cys Val Phe Ile Ser Leu Leu Ala Pro Leu
                245                 250                 255

Ala Phe His Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu Gly Val
            260                 265                 270

Thr Val Leu Leu Ala Leu Thr Val Phe Gln Leu Ile Leu Ala Glu Ser
        275                 280                 285

Met Pro Pro Ala Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr Met Ala
    290                 295                 300

Thr Met Thr Met Val Thr Phe Ser Thr Ala Leu Thr Ile Leu Ile Met
305                 310                 315                 320

Asn Leu His Tyr Cys Gly Pro Asn Ala His Pro Val Pro Ala Trp Ala
                325                 330                 335

Arg Val Leu Leu Leu Gly His Leu Ala Lys Gly Leu Cys Val Arg Glu
            340                 345                 350

Arg Gly Glu Pro Cys Gly Gln Ser Lys Pro Leu Glu Ser Ala Pro Ser
        355                 360                 365

Leu Gln Pro Pro Pro Ala Ser Pro Ala Gly Pro Cys His Glu Pro Arg
    370                 375                 380
```

```
Cys Leu Cys His Gln Glu Ala Leu Leu His His Ile Ala Ser Ile Ala
385                 390                 395                 400

Ser Thr Phe Arg Ser His Arg Ala Ala Gln Arg Arg His Glu Asp Trp
                405                 410                 415

Lys Arg Leu Ala Arg Val Met Asp Arg Phe Phe Leu Gly Ile Phe Phe
            420                 425                 430

Cys Met Ala Leu Val Met Ser Leu Ile Val Leu Val Gln Ala Leu
        435                 440                 445
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<210> 6
<211> 452
<212> PRT
<213> Gallus domesticus

<400> 6

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Met Gly Ser Ala Pro Leu Pro Ala Cys Leu Leu Ala Leu Ser Leu Ala
1               5                   10                  15

Gly Thr Val Leu Ala Pro Gly Cys Gly Ala Ala Gln Gly Arg Leu Ala
            20                  25                  30

His Lys Leu Leu His Asp Leu Phe Ala Asn Tyr Ser Ser Ala Leu Arg
        35                  40                  45

Pro Ala Glu Asp Thr Glu Arg Ala Leu Asn Val Thr Leu Gln Val Thr
    50                  55                  60

Leu Ser Gln Ile Ile Asp Met Asp Glu Arg Asn Gln Val Leu Thr Ser
65                  70                  75                  80

Tyr Leu Trp Val Arg Gln Ala Trp Leu Asp Ala His Leu Ala Trp Asp
                85                  90                  95

Lys Asp Ala Tyr Gly Gly Ile Asp Ser Ile Arg Ile Pro Ser Ser Tyr
            100                 105                 110

Val Trp Arg Pro Asp Ile Val Leu Tyr Asn Asn Ala Asp Glu Arg Phe
        115                 120                 125

Gly Gly Ser Met Glu Thr Asn Val Val Leu Arg Ser Asp Gly His Ile
    130                 135                 140

Met Trp Asp Ser Pro Ala Ile Thr Lys Ser Ser Cys Lys Val Asp Val
145                 150                 155                 160

Ser Tyr Phe Pro Phe Asp Gly Gln Gln Cys Arg Leu Thr Phe Gly Ser
                165                 170                 175

Trp Thr Tyr Asn Gly Asn Gln Ile Asp Leu Arg Asn Leu Leu Asp Thr
            180                 185                 190

Gly Asp Leu Thr Asp Phe Val Glu Asn Val Glu Trp Glu Val Leu Gly
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```
        195                 200                 205

Met Pro Ala Thr Arg Asn Val Val Thr Tyr Gly Cys Cys Ser Glu Pro
    210                 215                 220

Tyr Pro Asp Val Thr Tyr Thr Leu Leu Leu Arg Arg Arg Ala Ser Phe
225                 230                 235                 240

Tyr Ile Phe Asn Leu Leu Leu Pro Cys Val Met Ile Ser Phe Leu Ala
                245                 250                 255

Pro Leu Gly Phe Tyr Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu
            260                 265                 270

Gly Val Thr Val Leu Leu Ala Leu Thr Val Phe Gln Leu Leu Val Ala
        275                 280                 285

Glu Ser Met Pro Pro Ser Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr
    290                 295                 300

Ile Ala Thr Met Thr Met Ile Thr Ala Ser Thr Ala Leu Thr Ile Phe
305                 310                 315                 320

Ile Met Asn Ile His His Cys Gly Pro Gly Ala Arg Pro Val Pro Pro
                325                 330                 335

Trp Ala Arg Arg Leu Ile Leu His His Leu Ala Arg Ala Leu Cys Val
            340                 345                 350

Cys Glu Val Gly Glu Ser Cys Gly Arg Pro Gln Arg Glu Gly Thr Gly
        355                 360                 365

Gly Met Gly Pro Arg Asp Pro Pro Gly Glu Gly Val Glu Pro Gly Leu
    370                 375                 380

Cys Pro Arg Ser Arg Cys Leu Cys His His His Ala Val Leu Ser Ser
385                 390                 395                 400

Val Gly Tyr Ile Ala Gly Val Phe Arg Arg His Arg Thr Ala Gln Arg
                405                 410                 415

Arg Ala Ala Glu Trp Lys Lys Val Ala Lys Val Met Asp Arg Phe Phe
            420                 425                 430

Met Trp Val Phe Phe Leu Met Val Phe Leu Met Ser Val Leu Val Ile
        435                 440                 445

Gly Lys Ala Ala
    450
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<210> 7
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<213> Homo sapiens

<400> 7

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Met Asn Trp Ser His Ser Cys Ile Ser Phe Cys Trp Ile Tyr Phe Ala
1               5                  10                  15

Ala Ser Arg Leu Arg Ala Ala Glu Thr Ala Asp Gly Lys Tyr Ala Gln
            20                  25                  30

Lys Leu Phe Asn Asp Leu Phe Glu Asp Tyr Ser Asn Ala Leu Arg Pro
        35                  40                  45

Val Glu Asp Thr Asp Lys Val Leu Asn Val Thr Leu Gln Ile Thr Leu
    50                  55                  60

Ser Gln Ile Lys Asp Met Asp Glu Arg Asn Gln Ile Leu Thr Ala Tyr
65                  70                  75                  80

Leu Trp Ile Arg Gln Ile Trp His Asp Ala Tyr Leu Thr Trp Asp Arg
                85                  90                  95

Asp Gln Tyr Asp Gly Leu Asp Ser Ile Arg Ile Pro Ser Asp Leu Val
            100                 105                 110

Trp Arg Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Asp Glu Ser Ser
        115                 120                 125

Glu Pro Val Asn Thr Asn Val Val Leu Arg Tyr Asp Gly Leu Ile Thr
    130                 135                 140

Trp Asp Ala Pro Ala Ile Thr Lys Ser Ser Cys Val Val Asp Val Thr
145                 150                 155                 160

Tyr Phe Pro Phe Asp Asn Gln Gln Cys Asn Leu Thr Phe Gly Ser Trp
                165                 170                 175

Thr Tyr Asn Gly Asn Gln Val Asp Ile Phe Asn Ala Leu Asp Ser Gly
            180                 185                 190

Asp Leu Ser Asp Phe Ile Glu Asp Val Glu Trp Glu Val His Gly Met
        195                 200                 205

Pro Ala Val Lys Asn Val Ile Ser Tyr Gly Cys Cys Ser Glu Pro Tyr
    210                 215                 220

Pro Asp Val Thr Phe Thr Leu Leu Leu Lys Arg Arg Ser Ser Phe Tyr
225                 230                 235                 240

Ile Val Asn Leu Leu Ile Pro Cys Val Leu Ile Ser Phe Leu Ala Pro
                245                 250                 255

Leu Ser Phe Tyr Leu Pro Ala Ala Ser Gly Glu Lys Val Ser Leu Gly
            260                 265                 270

Val Thr Ile Leu Leu Ala Met Thr Val Phe Gln Leu Met Val Ala Glu
        275                 280                 285

Ile Met Pro Ala Ser Glu Asn Val Pro Leu Ile Gly Lys Tyr Tyr Ile
    290                 295                 300
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```
Ala Thr Met Ala Leu Ile Thr Ala Ser Thr Ala Leu Thr Ile Met Val
305                 310                 315                 320

Met Asn Ile His Phe Cys Gly Ala Glu Ala Arg Pro Val Pro His Trp
                325                 330                 335

Ala Arg Val Val Ile Leu Lys Tyr Met Ser Arg Val Leu Phe Val Tyr
            340                 345                 350

Asp Val Gly Glu Ser Cys Leu Ser Pro His His Ser Arg Glu Arg Asp
        355                 360                 365

His Leu Thr Lys Val Tyr Ser Lys Leu Pro Glu Ser Asn Leu Lys Ala
    370                 375                 380

Ala Arg Asn Lys Asp Leu Ser Arg Lys Lys Asp Met Asn Lys Arg Leu
385                 390                 395                 400

Lys Asn Asp Leu Gly Cys Gln Gly Lys Asn Pro Gln Glu Ala Glu Ser
                405                 410                 415

Tyr Cys Ala Gln Tyr Lys Val Leu Thr Arg Asn Ile Glu Tyr Ile Ala
            420                 425                 430

Lys Cys Leu Lys Asp His Lys Ala Thr Ser Ser Lys Gly Ser Glu Trp
        435                 440                 445

Lys Lys Val Ala Lys Val Ile Asp Arg Phe Phe Met Trp Ile Phe Phe
    450                 455                 460

Ile Met Val Phe Val Met Thr Ile Leu Ile Ile Ala Arg Ala Asp
465                 470                 475
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<210> 8
<211> 479
<212> PRT
<213> Rattus sp.

<400> 8

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Met Asn Arg Pro His Ser Cys Leu Ser Phe Cys Trp Met Tyr Phe Ala
1               5                   10                  15

Ala Ser Gly Ile Arg Ala Val Glu Thr Ala Asn Gly Lys Tyr Ala Gln
            20                  25                  30

Lys Leu Phe Ser Asp Leu Phe Glu Asp Tyr Ser Ser Ala Leu Arg Pro
        35                  40                  45

Val Glu Asp Thr Asp Ala Val Leu Asn Val Thr Leu Gln Val Thr Leu
    50                  55                  60

Ser Gln Ile Lys Asp Met Asp Glu Arg Asn Gln Ile Leu Thr Ala Tyr
65                  70                  75                  80

Leu Trp Ile Arg Gln Thr Trp His Asp Ala Tyr Leu Thr Trp Asp Arg
                85                  90                  95
```

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Asp Gln Tyr Asp Arg Leu Asp Ser Ile Arg Ile Pro Ser Asp Leu Val
            100                 105                 110

Trp Arg Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Asp Glu Ser Ser
        115                 120                 125

Glu Pro Val Asn Thr Asn Val Val Leu Arg Tyr Asp Gly Leu Ile Thr
    130                 135                 140

Trp Asp Ser Pro Ala Ile Thr Lys Ser Ser Cys Val Val Asp Val Thr
145                 150                 155                 160

Tyr Phe Pro Phe Asp Ser Gln Gln Cys Asn Leu Thr Phe Gly Ser Trp
                165                 170                 175

Thr Tyr Asn Gly Asn Gln Val Asp Ile Phe Asn Ala Leu Asp Ser Gly
            180                 185                 190

Asp Leu Ser Asp Phe Ile Glu Asp Val Glu Trp Glu Val His Gly Met
        195                 200                 205

Pro Ala Val Lys Asn Val Ile Ser Tyr Gly Cys Cys Ser Glu Pro Tyr
    210                 215                 220

Pro Asp Val Thr Phe Thr Leu Leu Leu Lys Arg Arg Ser Ser Phe Tyr
225                 230                 235                 240

Ile Val Asn Leu Leu Ile Pro Cys Val Leu Ile Ser Phe Leu Ala Pro
                245                 250                 255

Leu Ser Phe Tyr Leu Pro Ala Ala Ser Gly Glu Lys Val Ser Leu Gly
            260                 265                 270

Val Thr Ile Leu Leu Ala Met Thr Val Phe Gln Leu Met Val Ala Glu
        275                 280                 285

Ile Met Pro Ala Ser Glu Asn Val Pro Leu Ile Gly Lys Tyr Tyr Ile
    290                 295                 300

Ala Thr Met Ala Leu Ile Thr Ala Ser Thr Ala Leu Thr Ile Met Val
305                 310                 315                 320

Met Asn Ile His Phe Cys Gly Ala Glu Ala Arg Pro Val Pro His Trp
                325                 330                 335

Ala Lys Val Val Ile Leu Lys Tyr Met Ser Arg Ile Leu Phe Val Tyr
            340                 345                 350

Asp Val Gly Glu Ser Cys Leu Ser Pro Arg His Ser Gln Glu Pro Glu
        355                 360                 365

Gln Val Thr Lys Val Tyr Ser Lys Leu Pro Glu Ser Asn Leu Lys Thr
    370                 375                 380

Ser Arg Asn Lys Asp Leu Ser Arg Lys Lys Glu Val Arg Lys Leu Leu
385                 390                 395                 400
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Lys Asn Asp Leu Gly Tyr Gln Gly Gly Ile Pro Gln Asn Thr Asp Ser
405 410 415

Tyr Cys Ala Arg Tyr Glu Ala Leu Ala Lys Asn Ile Glu Tyr Ile Ala
420 425 430

Lys Cys Leu Lys Asp His Lys Ala Thr Asn Ser Lys Gly Ser Glu Trp
435 440 445

Lys Lys Val Ala Lys Val Ile Asp Arg Phe Phe Met Trp Ile Phe Phe
450 455 460

Ala Met Val Phe Val Met Thr Val Leu Ile Ile Ala Arg Ala Asp
465 470 475

<210> 9
<211> 24
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 9
ggaaaatgtg tgtgtcagta aagc 24

<210> 10
<211> 20
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 10
gaagtgtttt cagagtgagg 20

<210> 11
<211> 17
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 11
cagcaccaac gtggtcc 17

<210> 12
<211> 18
<212> DNA
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<220>
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<400> 12
ggcaccaact ggatgtgc 18

<210> 13
<211> 19
<212> DNA
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<220>
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<400> 13
cacgttctcc acgaagtcc 19

<210> 14
<211> 18
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 14
cagccgtagg tgagcacg 18

<210> 15
<211> 20
<212> DNA
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<220>
<223> Primer

<400> 15
tggcaggctt ttggacttcc 20

<210> 16
<211> 21
<212> DNA
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<220>
<223> Primer

<400> 16
tcttggcctt tgtagagttc c 21

<210> 17
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<212> DNA
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<220>
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<400> 17
tggcgccaga agatagtacc 20

<210> 18
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<212> DNA
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<220>
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<400> 18
tcactccatg gcccttacc 19

<210> 19
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<212> DNA
<213> Homo sapiens

<220>
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<222> (59)..(140)

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<222> (516)..(816)

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aag tgt gtt ttc aga gtg agg gag tgt tcc atc gca tca gaa gtt ttg 106
Lys Cys Val Phe Arg Val Arg Glu Cys Ser Ile Ala Ser Glu Val Leu
1 5 10 15

aag aaa cca gct cga gat gga gaa gtg gaa aca g gtttgagaga 150
Lys Lys Pro Ala Arg Asp Gly Glu Val Glu Thr
20 25

tactggaggg ggcagagcag tgggatttag aatccctggg tgaaagtctg gactctcgtg 210

gcttatttgg gcccctctag catttgtgga gaggcaggca gactccaggt ccttgaaaag 270

gggagggtgg aggagaaatt tgtcagcctg gcgccagaag atagtaccag ttcactccat 330

ggcccttacc tcatgtgtcc ctgcaggcag gccagggagg aactagagcc acagctagag 390

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caagagaagg cagacaccag gaggacactc ataaggacag ggccccagcc ctgggagtgg 450

agggtgtgag cagaggccct gggactaggg cctgggatgg acaaccctcc ttactgaccc 510

tccag ag tgc ctg gga gct gag ggc cgg ctg gct ctc aag ctg ttc cgt  559
     Glu Cys Leu Gly Ala Glu Gly Arg Leu Ala Leu Lys Leu Phe Arg
               30                  35                  40

gac ctc ttt gcc aac tac aca agt gcc ctg aga cct gtg gca gac aca   607
Asp Leu Phe Ala Asn Tyr Thr Ser Ala Leu Arg Pro Val Ala Asp Thr
         45                  50                  55

gac cag act ctg aat gtg acc ctg gag gtg aca ctg tcc cag atc atc   655
Asp Gln Thr Leu Asn Val Thr Leu Glu Val Thr Leu Ser Gln Ile Ile
     60                  65                  70

gac atg gat gaa cgg gac cag gtg ctg acc ctg tat ctg tgg ata cgg   703
Asp Met Asp Glu Arg Asp Gln Val Leu Thr Leu Tyr Leu Trp Ile Arg
 75                  80                  85                  90

cag gag tgg aca gat gcc tac cta cga tgg grc ccc aat gcc tat ggt   751
Gln Glu Trp Thr Asp Ala Tyr Leu Arg Trp Xaa Pro Asn Ala Tyr Gly
                95                 100                 105

ggc ctg gat gcc atc cgc atc ccc agc agt ctt gtg tgg cgg cca gac   799
Gly Leu Asp Ala Ile Arg Ile Pro Ser Ser Leu Val Trp Arg Pro Asp
            110                 115                 120

atc gta ctc tat aac aa gtactgccta tctgggcccc tcctctctct           846
Ile Val Leu Tyr Asn Lys
        125

taccctctc tagacttgcc cttagctgtg ggggtgtagt gatcccctct ccctaccaca 906

taacctggtt gccacgctgc cctggaagct tttccccagg acccttctaa gctgccaagc 966

actcagcccc tccatggcac ccccacttta ggctatccca ggccagccca ggctgaacgt 1026

ctcctcggaa cctactgtgt ggtccagggc agatgtctga atcacaaggg cctctctagg 1086

gcacactttt agctctaagt ctctcagggc tcccccaaga gcctgtctaa gggtctcttt 1146

cctccaggac atagccctct ggaacactgc tttatgtctc cttgaccagt tccgtgtctc 1206

ccagccagca catagctctg catattttct ctggggccct tctacaagtt ttgcagatgt 1266

cccccaaggg aagtcactgt gtgtcccgga gctacctctg ggttctgcag aggccttttt 1326

atacatcctc tggctacgtc tgtgtccctt ctgggccctt caggcaccac cccttccagg 1386

cctcgaaagg cagcgggtct ctctaggtgc actccaccct ctgtgttgct ttgttctgaa 1446

aacaagaatc aaattaacga aaaaaaaaca agcacaagtt tatttattta tttgagacac 1506

agtctcgctc tgtcgcccag gctggagtgc agtggcgcta tctcggctca ctgcaagctc 1566
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cgcctcccgg gttcacgcaa ttctcctgcc tcaacctccc aaataactgg gactgcaggc 1626

acccgccacc acgcccagct agtttttgt attttagta gagacgaggt ttcaccgtgt 1686

tagccagggt ggtctcgatc tcctgacctc gtgatccgcc cacctcggcc tcccaaagtg 1746

ctgggattac aggcgtgagc caccgcaccc agccacaagc agaagtttat taatctgctg 1806

tacccatcat gggagaggcc ttagttcaaa agtatttctc tctgaaggca gtgacttagg 1866

ggccttgctt aaatagaaat tcaagaaaga gccagtaagt tataaatagt ggcaagacaa 1926

aggacagcca cctttaaaag gcgggaaaac gtggaaagag ggtaaaatct gtttccagat 1986

tcctctggca cctactggtg ccctttggat aagcaagtgc tgactccagc aaggaagggc 2046

tgatgtcctg ccatcaggcc agcagacgct ggggccaggt gctcccctgc gtcgtgagtg 2106

tctcgaactt aacgagcctc aatattctgg ggagaagttt tggtttcttt cagcccctgg 2166

gggtctgccc tgggctcccg gcctccgggg ctgctcctca ggctggacag cctaggtgag 2226

ccctgccccg cctgccccca g a gcc gac gcg cag cct cca ggt tcc gcc agc 2278
                         Ala Asp Ala Gln Pro Pro Gly Ser Ala Ser
                             130                 135

acc aac gtg gtc ctg cgc cac gat ggc gcc gtg cgc tgg gac gcg ccg   2326
Thr Asn Val Val Leu Arg His Asp Gly Ala Val Arg Trp Asp Ala Pro
    140                 145                 150

gcc atc acg cgc agc tcg tgc cgc gtg gat gta gca gcc ttc ccg ttc   2374
Ala Ile Thr Arg Ser Ser Cys Arg Val Asp Val Ala Ala Phe Pro Phe
155                 160                 165                 170

gac gcc cag cac tgc ggc ctg acg ttc ggc tcc tgg act cac ggc ggg   2422
Asp Ala Gln His Cys Gly Leu Thr Phe Gly Ser Trp Thr His Gly Gly
                175                 180                 185

cac caa ctg gat gtg cgg ccg cgc ggc gct gca gcc agc ctg gcg gac   2470
His Gln Leu Asp Val Arg Pro Arg Gly Ala Ala Ala Ser Leu Ala Asp
            190                 195                 200

ttc gtg gag aac gtg gag tgg cgc gtg ctg ggc atg ccg gcg cgg cgg   2518
Phe Val Glu Asn Val Glu Trp Arg Val Leu Gly Met Pro Ala Arg Arg
        205                 210                 215

cgc gtg ctc acc tac ggc tgc tgc tcc gag ccc tac ccc gac gtc acc   2566
Arg Val Leu Thr Tyr Gly Cys Cys Ser Glu Pro Tyr Pro Asp Val Thr
    220                 225                 230

ttc acg ctg ctg ctg cgc cgc cgc gcc gcc gcc tac gtg tgc aac ctg   2614
Phe Thr Leu Leu Leu Arg Arg Arg Ala Ala Ala Tyr Val Cys Asn Leu
235                 240                 245                 250

ctg ctg ccc tgc gtg ctc atc tcg ctg ctt gcg ccg ctc gcc ttc cac   2662
Leu Leu Pro Cys Val Leu Ile Ser Leu Leu Ala Pro Leu Ala Phe His
                255                 260                 265
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```
cta cct gcc gac tca ggc gag aag gtg tcg ctg ggc gtc acc gtg ctg   2710
Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu Gly Val Thr Val Leu
            270                 275                 280

ctg gcg ctc acc gtc ttc cag ttg ctg ctg gcc gag agc atg cca ccg   2758
Leu Ala Leu Thr Val Phe Gln Leu Leu Leu Ala Glu Ser Met Pro Pro
        285                 290                 295

gcc gag agc gtg ccg ctc atc ggg aag tac tac atg gcc act atg acc   2806
Ala Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr Met Ala Thr Met Thr
    300                 305                 310

atg gtc aca ttc tca aca gca ctc acc atc ctt atc acg aac ctg cat   2854
Met Val Thr Phe Ser Thr Ala Leu Thr Ile Leu Ile Thr Asn Leu His
315                 320                 325                 330

tac tgt ggt ccc agt gtc cgc cca gtg cca gcc tgg gct agg gcc ctc   2902
Tyr Cys Gly Pro Ser Val Arg Pro Val Pro Ala Trp Ala Arg Ala Leu
                335                 340                 345

ctg ctg gga cac ctg gca cgg ggc ctg tgc gtg cgg gaa aga ggg gag   2950
Leu Leu Gly His Leu Ala Arg Gly Leu Cys Val Arg Glu Arg Gly Glu
            350                 355                 360

ccc tgt ggg cag tcc agg cca cct gag tta tct cct agc ccc cag tcg   2998
Pro Cys Gly Gln Ser Arg Pro Pro Glu Leu Ser Pro Ser Pro Gln Ser
        365                 370                 375

cct gaa gga ggg gct ggc ccc cca gcg ggc cct tgc cac gag cca cga   3046
Pro Glu Gly Gly Ala Gly Pro Pro Ala Gly Pro Cys His Glu Pro Arg
    380                 385                 390

tgt ctg tgc cgc cag gaa gcc cta ctg cac cac gta gcc acc att gcc   3094
Cys Leu Cys Arg Gln Glu Ala Leu Leu His His Val Ala Thr Ile Ala
395                 400                 405                 410

aat acc ttc cgc agc cac cga gct gcc cag cgc tgc cat gag gac tgg   3142
Asn Thr Phe Arg Ser His Arg Ala Ala Gln Arg Cys His Glu Asp Trp
                415                 420                 425

aag cgc ctg gcc cgt gtg atg gac cgc ttc ttc ctg gcc atc ttc ttc   3190
Lys Arg Leu Ala Arg Val Met Asp Arg Phe Phe Leu Ala Ile Phe Phe
            430                 435                 440

tcc atg gcc ctg gtc atg agc ctc ctg gtg ctg gtg cag gcc ctg tga   3238
Ser Met Ala Leu Val Met Ser Leu Leu Val Leu Val Gln Ala Leu
        445                 450                 455

gggctgggac taagtcacag ggatctgctg cagccacagc tcctccagaa agggacagcc 3298

acggccaagt ggttgctggt ctttgggcca gccagtctct ccccactgct cctaagatcc 3358

tgagacactt gacttcacaa tccacaaggg agcactcatt gtctacacac cctaactaaa 3418

ggaagtccag agcctgccac tcccctaatt ccaaaaaaaa gaggaactct acaaaggcca 3478
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agatcacaga gtacagtctt ggagggacag aattgtttgt gctgggtatt ggagctctca 3538

gtggggagca catgggttat aatgagaaac tgaactgtac tgctgcattt cctgtcttcc 3598

ttcctaggtg gctgctttgc agggctttgg ctgttacctt tccctgctga ggggctcagg 3658

gaaaagggtc ggggattctc agtcgagttt ccagagcagg aggccctaca gacatttggc 3718

cccaaatccc tgactcaata aagtaagcgt gtacctaaaa aaaaaaaaaa aaaactcgac 3778

tctagattgc ggccgcggtc atagctgttt cctgatctga attcgtcgac aagctt 3834

<210> 20
<211> 457
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> 101
<223> Xaa=uncertain

<400> 20

Lys Cys Val Phe Arg Val Arg Glu Cys Ser Ile Ala Ser Glu Val Leu
1 5 10 15

Lys Lys Pro Ala Arg Asp Gly Glu Val Glu Thr Glu Cys Leu Gly Ala
20 25 30

Glu Gly Arg Leu Ala Leu Lys Leu Phe Arg Asp Leu Phe Ala Asn Tyr
35 40 45

Thr Ser Ala Leu Arg Pro Val Ala Asp Thr Asp Gln Thr Leu Asn Val
50 55 60

Thr Leu Glu Val Thr Leu Ser Gln Ile Ile Asp Met Asp Glu Arg Asp
65 70 75 80

Gln Val Leu Thr Leu Tyr Leu Trp Ile Arg Gln Glu Trp Thr Asp Ala
85 90 95

Tyr Leu Arg Trp Xaa Pro Asn Ala Tyr Gly Gly Leu Asp Ala Ile Arg
100 105 110

Ile Pro Ser Ser Leu Val Trp Arg Pro Asp Ile Val Leu Tyr Asn Lys
115 120 125

```
Ala Asp Ala Gln Pro Pro Gly Ser Ala Ser Thr Asn Val Val Leu Arg
    130                 135                 140

His Asp Gly Ala Val Arg Trp Asp Ala Pro Ala Ile Thr Arg Ser Ser
145                 150                 155                 160

Cys Arg Val Asp Val Ala Ala Phe Pro Phe Asp Ala Gln His Cys Gly
                165                 170                 175

Leu Thr Phe Gly Ser Trp Thr His Gly Gly His Gln Leu Asp Val Arg
            180                 185                 190

Pro Arg Gly Ala Ala Ala Ser Leu Ala Asp Phe Val Glu Asn Val Glu
        195                 200                 205

Trp Arg Val Leu Gly Met Pro Ala Arg Arg Arg Val Leu Thr Tyr Gly
    210                 215                 220

Cys Cys Ser Glu Pro Tyr Pro Asp Val Thr Phe Thr Leu Leu Leu Arg
225                 230                 235                 240

Arg Arg Ala Ala Ala Tyr Val Cys Asn Leu Leu Leu Pro Cys Val Leu
                245                 250                 255

Ile Ser Leu Leu Ala Pro Leu Ala Phe His Leu Pro Ala Asp Ser Gly
            260                 265                 270

Glu Lys Val Ser Leu Gly Val Thr Val Leu Leu Ala Leu Thr Val Phe
        275                 280                 285

Gln Leu Leu Leu Ala Glu Ser Met Pro Pro Ala Glu Ser Val Pro Leu
    290                 295                 300

Ile Gly Lys Tyr Tyr Met Ala Thr Met Thr Met Val Thr Phe Ser Thr
305                 310                 315                 320

Ala Leu Thr Ile Leu Ile Thr Asn Leu His Tyr Cys Gly Pro Ser Val
                325                 330                 335

Arg Pro Val Pro Ala Trp Ala Arg Ala Leu Leu Leu Gly His Leu Ala
            340                 345                 350

Arg Gly Leu Cys Val Arg Glu Arg Gly Glu Pro Cys Gly Gln Ser Arg
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355 360 365

Pro Pro Glu Leu Ser Pro Ser Pro Gln Ser Pro Glu Gly Gly Ala Gly
370 375 380

Pro Pro Ala Gly Pro Cys His Glu Pro Arg Cys Leu Cys Arg Gln Glu
385 390 395 400

Ala Leu Leu His His Val Ala Thr Ile Ala Asn Thr Phe Arg Ser His
405 410 415

Arg Ala Ala Gln Arg Cys His Glu Asp Trp Lys Arg Leu Ala Arg Val
420 425 430

Met Asp Arg Phe Phe Leu Ala Ile Phe Phe Ser Met Ala Leu Val Met
435 440 445

Ser Leu Leu Val Leu Val Gln Ala Leu
450 455

<210> 21
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 21
cctccagggt cacattcaga gtctg 25

<210> 22
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 22
cagcttgaga gccagccggc 20

<210> 23
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 23
gcgaattcag gcctcacatc cagagacctg c 31

<210> 24
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

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cgtctagatg acttagtccc agccctcaca gg 32